



## Iowa Department of Public Health Bureau of Environmental Health Services

### Nitrate in Public Drinking Water

**Overview:** The U.S. Environmental Protection Agency (EPA) has set safe drinking water standards of nitrate and nitrite for public water supplies. Your public water supplier is required to notify you if your drinking water exceeds safe levels. Source Water Protection (SWP) is a means of preventing or decreasing contaminants, such as nitrates from entering the source water from which the public water supply draws its drinking water from.

#### What are the safe drinking water standards for nitrate?

The U.S. Public Health Service recommended limit of 10 mg/L NO<sub>3</sub>-N (nitrate-nitrogen) in drinking water is used by the EPA as the maximum contaminant level for public water systems. Public water systems are legally defined as those that have 15 or more connections or regularly serve more than 25 persons.

EPA requires regular testing of public water systems for nitrate-nitrogen and nitrite-nitrogen. If a test indicates that the nitrate-nitrogen concentration of the delivered water exceeds the standard, the public must be notified and treatment must be performed. Often, the treatment may be as simple as blending the water that exceeds the standard with water that has a nitrate-nitrogen concentration less than 10 mg/L.

In SWP planning, it is advantageous to first identify if the contaminant is a point source or non-point source. A long term solution is to decrease the source of the contaminant. In the long run this will aid in keeping the public water supply sustainable.

#### Why should I be concerned?

Both the nitrate and nitrite forms of nitrogen in drinking water are health concerns. High nitrogen levels can cause infants to develop a life-threatening condition called "blue-baby" syndrome or methemoglobinemia. This is a condition which decreases the ability of blood to get oxygen from the lungs to all parts of the body. A case of infant methemoglobinemia has not occurred in Iowa for over 30 years.

#### How does nitrate get into drinking water?

The source of nitrate in drinking water can come from a variety of sources. These sources are called point sources and non-point sources.

Point sources are sources associated with a single location. Examples of point sources are:

- Ag Chemical facilities
- Nitrogen Spills (in-field or specific sites)
- Municipal or Industrial Wastewater
- Landfills or Disposal Areas
- Septic Systems

Non-point sources are sources that cannot be tied to a single location. Included with non-point sources are:

- Commercial Nitrogen Application
- Manure Application
- Field Runoff
- Animal Feedlots
- Urban Runoff
- Decaying Plant Materials

This fact sheet summarizes information about this chemical and is not a complete listing of all possible effects. It does not refer to work exposure or emergency situations.

### **Who should I contact if I want more information?**

- Poison Control Center: 800-222-1222
- Your local public health agency or county sanitarian
- Iowa Department of Public Health



[www.idnr.gov/](http://www.idnr.gov/)

- Iowa Department of Natural Resources



[www.idph.state.ia.us/](http://www.idph.state.ia.us/)

The Iowa Department of Natural Resources Source Water Protection Program should be contacted to discuss the susceptibility of your well field to environmental contaminants including nitrate and nitrite. The phone number for the Source Water Protection Program is (515) 281-0932.